UPGRADING OF PANNIPITIYA – RATMALANA 132KV TRANSMISSION LINE TO IMPROVE THE CURRENT CARRYING CAPACITY

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by

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ıbstract

here is a constant increase in demand for electric energy both in industrial and domestic ectors. Meeting this demand encounters problems associated with construction of new :ansmission lines not only in urban areas but also in rural areas. In addition to the vironmental clearance, obtaining of right of way for the power lines is becoming more and ıore difficult. It is therefore much advantageous if the power transmission capacity can be ıcreased in the existing transmission lines.

'he aim of this thesis is to examine the possibilities of using the new types of conductors vith higher current carrying capacity in existing transmission lines with capacity restrictions. 'he replacement of conductors shall improve the line capacity while satisfying the other onditions such as ground clearance, transmission loss etc. Power interruptions necessary for he replacement work must be kept as low as possible and in order to achieve this, ıodifications required for the existing structures shall be minimized. The analysis is done for 'annipitiya - Ratmalana 132kV transmission line which is critical in transmission network.

.imits of the operation of the new conductor selected for the purpose are demarcated onsidering the design parameters of the existing line. Also the other components and tructures of the line are checked for their sustainability for new loads due to the Gap type onductor and necessary modifications are identified for successful enhancement of the ansmission capacity.

3y re-conductoring and improving the current carrying capacity of transmission line it :rovides significant cost savings both in keeping transmission costs down, and differing or :ven eliminating the need for new transmission line.